WHAT IS CLAIMED IS:

1. An error correction coding method, characterized in that at least two distinct sections of a predetermined elementary code are used, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3) defining a code word, two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed.

2. The coding method according to claim 1, characterized in that the code words of said elementary code have undergone partitioning into four packets (s_0, s_1), (s_2, s_3), (b_0, b_1), (b_2, b_3) such that each code word, except the zero code word, comprises at least three lit packets out of four, wherein a packet is said to be lit when it comprises at least a bit of value 1.

3. The coding method according to claim 1, characterized in that said elementary code sections are associated in sequence in order to form at least one coding trellis.

4. The coding method according to claim 3, characterized in that said trellis(es) is(are)

cyclic.

5. The coding method according to claim 3, characterized in that it comprises two trellises wherein the source data to be coded are entered in different orders.

6. The coding method according to claim 4, characterized in that the retained coding result is the one which has an arrival state identical with its starting state, among all the possible starting states for one of said elementary code sections, selected as started section.

7. The coding method according to claim 6, characterized in that said coding result is the set of information and redundancy elements delivered by said trellis(es).

8. The coding method according to claim 7, characterized in that puncturing is applied on said elements forming the coding result.

9. The coding method according to claim 1, characterized in that at least one of said sections is punctured.

10. The coding method according to claim 9,

characterized in that at least one left punctured section and at least one right punctured section are used.

11. The coding method according to claim 3, characterized in that said trellis(es) are duplicated at least once in order to have at least two coding sets interconnected via permutation means.

12. The coding method according to claim 11, characterized in that the data to be coded are transmitted to each of said coding sets with a shift.

13. The coding method according to claim 1, characterized in that said vectors consist of binary elements.

14. The coding method according to claim 13, characterized in that said elementary code is a Hamming [8,4,4] code.

15. The coding method according to claim 14, characterized in that it applies the following sections:

- $H;\ (y_0,\ y_1,\ x_0,\ x_1)\quad (b_0,\ b_1,\ b_2,\ b_3)$
- $H;\ (x_0,\ x_1,\ y_0,\ y_1)\quad (b_0,\ b_1,\ b_2,\ b_3)$

- $H;\ (x_0,\ y_0,\ y_1,\ x_1)\quad (b_0,\ b_1,\ b_2,\ b_3)$
- $H;\ (y_0,\ x_0,\ x_1,\ y_1)\quad (b_0,\ b_1,\ b_2,\ b_3)$
- $H;\ (y_0,\ x_0,\ y_1,\ x_1)\quad (b_0,\ b_1,\ b_2,\ b_3)$
- $H;\ (x_0,\ y_0,\ x_1,\ y_1)\quad (b_0,\ b_1,\ b_2,\ b_3)$.

16. The coding method according to claim 10, characterized in that said elementary code is a Hamming [8,4,4] code and that it applies the following punctured sections:

- $H^g;\ (*,*,\ x_0,\ x_1)\quad (*,\ *,\ b_2,\ b_3)$
- $H^d;\ (x_0,\ x_1,*,*)\ ,\ (b_0,\ b_1,*,*)$.

17. The coding method according to claim 11, characterized in that said elementary code is a Hamming [8,4,4] code and that it comprises three coding sets each receiving 12 coding bits via an identity permutation, a 4 bit cyclic shift permutation and a 8 bit cyclic shift permutation, respectively.

18. The coding method according to claim 17, characterized in that said coding sets are organized in order to produce a Golay [24,12,8] code.

19. The coding method according to claim 1, characterized in that said vectors consist of basic words which may assume 4 values.

20. The coding method according to claim 19, characterized in that said elementary code is a Nordstrom-Robinson code with parameters [8,4,6].

21. The coding method according to claim 1, characterized in that said vectors consist of basic words which may assume 8 values.

22. The coding method according to claim 21, characterized in that said elementary code is a M[8,4] code.

23. The coding method according to claim 1, characterized in that it is of the "turbocode" type.

24. An error correcting coding device, characterized in that it comprises at least two coding modules corresponding to at least two distinct sections of a predetermined elementary code, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1), according to a vector of branch labels (b_0, b_1, b_2, b_3),

two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed.

25. A method for decoding coding data according to the coding method according to claim 1, characterized in that at least two distinct sections of a predetermined elementary code are used, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3),

two sections of said elementary code being distinct when the order and/or the role of the elements of said branched label vector are changed.

26. The decoding method according to claim 25, characterized in that it is iterative.

27. The decoding method according to claim 26, characterized in that, at every iteration, a posteriori probabilities are computed on metrics associated with at least one trellis defined by said elementary code sections and in that said iterations are interrupted when a stable result is obtained and/or after a predetermined number of iterations.

28. A device for decoding data coded by the coding method according to claim 1, characterized in that it comprises at least two decoding

modules corresponding to at least two distinct sections of a predetermined elementary code, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1), according to a vector of branch labels (b_0, b_1, b_2, b_3),

two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed.